



### **Assistant Professors**

Rebecca deGraffenried ( Hawaii at Manoa, 2021)

Petrology and Geochemistry

Sarah Jacquet ( Macquarie University, Sydney, Australia, 2016 )

Biogeochemistry and Paleontology

Tiffany Rivera (Roskilde Universitet, Roskilde, Denmark, 2013)

Petrology and Geochemistry

Tara Selly,

Research Assistant Professor and Assistant Director of the X-ray Microanalysis Lab  
(University of Missouri, 2018)

Biogeochemistry and Paleontology

Lydia Tackett, Visiting Associate Professor (University of Southern California, 2013)

Biogeochemistry and Paleontology

### **Associate Professors**

John W. Huntley (Virginia Tech, 2007)

Paleontology and Paleocology

James (Jim) D. Schiffbauer, X-ray Microanalysis Core Facility Director

(Virginia Tech, 2009) Paleontology  
and Geochemistry

### **Professors**

Martin Appold, Director of Graduate Studies (Johns Hopkins University, 1998)

Hydrogeology

Francisco (Paco) Gomez (Cornell University, 1999)

Paleoseismology and Neotectonics

Mian Liu, Department Chair (University of Arizona, 1989)

Geophysics

Ken McLeod (University of Washington, 1992)

Paleontology and Biogeochemistry

Eric Sandvol (New Mexico State University, 1995)

Seismotectonics

### **Director of Field Studies and Assistant Teaching Professor**

Nathan Hopkins (Lehigh University, 2016)

Geological Field Methods, Geomorphology

### **Professors Emeriti**

Robert Bauer (University of Minnesota, 1982)

Precambrian Geology

Raymond Ethington (University of Iowa, 1958)

Conodont Biostratigraphy

Glen Himmelberg (University of Minnesota, 1965)

Chemical petrology

Cheryl Kelley (University of North Carolina, 1993)

Aquatic geochemistry

Peter Nabelek ( SUNY, Stony Brook 1983)

Trace-element geochemistry

Kevin Shelton (Yale University, 1982)

Economic Geology

Michel Underwood (Cornell University, 1983)

Sedimentology

# **GEOLOGICAL SCIENCES**

## **ROSTER**

### **Staff**

Leah Klasing, Office Support Assistant

Stephen Stanton, Library Information Specialist

# Geological Sciences Alumni 2023

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## From Department Chair Mian Liu

I hope this newsletter finds you well. Our regular newsletter stopped four years ago because of the COVID pandemic and the loss of staff in our front office. Still being short-handed, we started an electronic newsletter last year and planned to do that twice a year, but many of you told us that you preferred the printed version. We heard you, and we hope you will find this newsletter informative.

As I mentioned in my email to you earlier this fall, the department has been doing well. Our department successfully passed MU's five-year program assessment this year. This extensive review recognized the educational and research excellence of our department. The data compiled by the university indicate that our undergraduate and graduate programs remain strong and competitive, our educational efficiency is above the national mean, and the per capita research productivity of our faculty is above the mean of our peer departments in the nation. Highlights of our faculty achievements this year include: Eric Sandvol has been named a Curator's Distinguished Professor, the highest honor bestowed on faculty members by the Curators of the University of Missouri System; Jim Schiffbauer has been selected as an MU Research Excellence Postdoc Program (REP) Faculty Scholar – MU will provide 2-year's support for him to hire a postdoc fellow to work with him; and Mian Liu is honored by the Geological Society of America (GSA) at its annual meeting in Pittsburgh as the recipient of the 2023 George Woollard Award for outstanding contributions to geophysics (my apology for self-bragging).

The past year is a year of change, including personnel. After serving as our Field Camp Director and our Director for Undergraduate Studies for 14 years, Miriam Marquero-Molina went back to her alma mater, UT-Austin, to take a similar but more challenging position; Hector Lamadrid transferred to the University of Oklahoma to be closer to his family. We cherish their contributions to our department and wish them good luck with their new jobs. The positive side of the

personal changes is the new faculty members we were able to hire this year: Dr. Nathan Hopkins joined us as our new Field Camp Director and Director of Undergraduate Studies. He participated in our field camp in summer 2023 and overlapped with Miriam to be familiar with all aspects of running the exciting field camp. Drs. Tiffany Rivera and Rebecca deGraffenried have been successfully recruited for our mineralogy and petrology positions – Tiffany has started this fall, and Rebecca will join us in January 2024. We are very excited about our new hires; they will help to shape the promising future of our department. In addition, Dr. Lydia Tackett joined us as a visiting associate professor this fall.

One major personnel change is our beloved Marsha, she has decided to retire, effectively at the end of October, after 37 years of serving our students, faculty, and alumni. Her contribution to our department is beyond words, and her departure will leave a void that will be hard to fill.

In the past year we lost Ed Williamson, a dear friend and unwavering supporter of our department. We have thrived in the challenging times because of the dedication of our faculty and staff, the effort of our students, and the support of people like Ed and you. Your generous gifts to the department have enabled us to provide competitive scholarships to our undergraduate and graduate students, to maintain our Branson field camp facilities and make it the oldest and one of the best field camps in the country, and to build the department for a bright future – one of this year's faculty hires was made possible because we were able to support this position through shared funding with the college. The future of the department lies with our junior faculty and our future faculty hires. That is one reason in 2018 the Geology Development Board established the Geology Alumni Endowment Fund, aimed at attracting and retaining outstanding young faculty in the department. The Geology Development Board is launching a new fund-raising drive for the Geology Alumni Endowment Fund to help it reach the \$1 million goal. To start this drive, the board members have raised \$75,000 of the \$370,122 needed to reach the goal. You may consider joining them in this effort.

I hope you enjoy this newsletter, and please keep us informed about your activities. Please follow our Facebook and twitter at "MU Geology" and "MU Geology Field Camp", and to check our website (<https://geology.missouri.edu>), to get frequent updates of the exciting things happening here.

Sincerely,

*Man Liu*

Chair & E.B. Branson Professor

P.S. This newsletter, planned to reach you in November 2023, was delayed again due to the staff transition in the front office. I'm happy to report that Leah Klasing has joined us as our Office Support Assistant. She has been doing a remarkable job for the staff transition, including working with the Geology Development Board to put together this newsletter. Thank you, Leah!

## Graduates 2023

### BACHELOR OF ARTS

Spencer Anderson  
Colin Kramer  
Allie Pigg

### BACHELOR OF SCIENCE

Zach Betta  
Noah Cadwell  
Andrew Richardet  
Madi Bruner  
Laney Drabczyk  
Damon Freers  
Clare Mate  
Bridget O'Day  
Sam Pritchett  
Austin Villhard

### MASTER OF SCIENCE

#### **Will Hunt**

Advisor: Hector Lamadrid

#### **Taylor Murphy**

Advisors: Tandi Bidgoli/Paco Gomez

#### **Rachael Savoie**

Advisor: Ken MacLeod

#### **Oguzhan Yalvac**

Advisor: Eric Sandvol

#### **Cassandra Bennett**

Advisors: Jim Schiffbauer/Sarah Jacquet

### DOCTOR OF PHILOSOPHY

#### **Eusebius Kutsienyo**

Advisor: Martin Appold

**Mary Clark** was elected to Honorary Life Membership on the Geology Development Board in the Fall of 2023. Mary has served on the board for thirty years and the Department and the Board acknowledge and celebrate her continued dedication and contributions to the students, Department, Development Board, and the University.



Mary accompanied by her husband, Bob Clark.

### **Community Outreach**



Mizzou Rocks day camp is an exploration of geologic time and invertebrate paleontology for youth entering grades 4-6. At camp youth will participate in a variety of hands-on experiences exploring fossils and geologic history

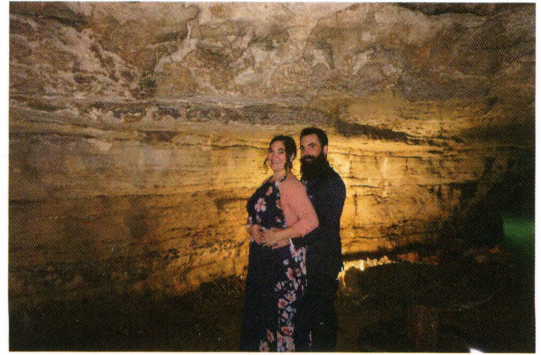
## M.U.G.G.S. (MU Geological Graduate Society)

### CAVE FORMAL: A Night to Remember

MU Geological Graduate Society held our first cave formal at Stark Cavern, Eldon, Missouri, in November 2023. The cave formal was a resounding success; it was a celebration of friendships, perseverance, hard work and geology. Dressed in our finest attire, we showcased a remarkable display of our unique personalities within the MUGGS community. As you stepped into the cave, we were transported into a world of geological wonders and glamour. The detail of the 'tites and 'mites gave a more personal touch and sense of the magic of nature's. MUGGS Cave Formal undoubtedly set a standard for future social gathering to tighten the graduate student community in the Geological Science Department.



Left: **Mridula Bristy** and **Astha Singh**, both PhD students at the Department of Geological Sciences



Right: **Thomas and Amanda Herbst**. Thomas is a PhD student at the Department of Geological Sciences

Right: MUGGS and their invited guests posing for a group photo.



Left: Formal Queen and King – **Emily Edwards** and **Will Hunt**

## Faculty News (in their own words)

**Martin Appold** worked on a mixture of long-standing and new topics related to the physical and chemical behavior of subsurface fluids during 2022-23. His 15-year project on CO<sub>2</sub> sequestration in northern Texas concluded in April with the end of the funding from the Department of Energy and the graduation of doctoral student, Eusebius Kutsienyo. *Martin is excited about new research possibilities in hydrogen sequestration, which is governed by many of the same principles as CO<sub>2</sub> sequestration. He had two senior thesis students, Noah Cadwell and Andrew Richardet, carry out exploratory models on generic field sites to test the effects of aquifer geometry and thermal profile on hydrogen sequestration potential. New master's student, Veronica Fritz, began working with Martin in June to build on this work at a site in the Arbuckle Range in*



southern Oklahoma. New doctoral student, Mridula Bristy, joined Martin in January to extend ongoing experimental research on the partitioning of base metals between brine and dolomite, focusing so far on copper. New master's student, Becca May, also joined Martin in January to expand on research aimed at understanding the composition of hydrothermal ore fluids in the Lemhi Pass thorium and rare earth element district along the central Idaho-Montana border through studies of fluid inclusion and mineral chemistry. Undergraduate student, Liz Cahalan, also contributed to the Lemhi Pass work, focusing on an anomalous copper deposit. Undergraduate student, Max Sperry,

investigated the nature of rare earth element mineralization in the Bourbon and Iron Mountain deposits in the Southeast Missouri iron province to see if these deposits are as enriched in rare earth elements as the nearby Pea Ridge deposit. Martin continues to serve as co-editor of *Hydrogeology Journal*. The courses Martin taught during 2022-23 include *Environmental Geology*, *Themes in Geology—Geology and the Green Economy*, *Groundwater Modeling*, and a self-paced online version of *Introduction to Earth*.

**Nathan Hopkins** joined the department as Field Camp Director and Assistant Teaching Professor in May of 2023. A 2011 graduate of the department and native Missourian, he is thrilled to return home and contribute to the educational mission of the Department of Geological Sciences. After leaving Mizzou, Nate first earned his PhD at Lehigh University specializing in the

geomorphology, sedimentary processes, and deformation mechanics in glacial and periglacial environments. As a generalist, he's assembled a diverse toolbox for addressing geological problems – geologic mapping, topographic analysis, remote sensing, GIS, rock magnetics – which he has previously incorporated in his teaching at the Lehigh University Field Camp, Minot State University, and Tulane University. Nate



moved to Mizzou from the Idaho Geological Survey in Moscow, ID. A lover of the field and believer in the power of field education, he looks forward to using his unique

perspective and experience to guide the Geology Field Camp as it adapts to the changing nature of geoscience education and the changing needs of geoscience professionals.



**Tiffany Rivera** joined the faculty in August 2023. In early August, she submitted an abstract on the zircon crystallization histories amongst distributed rhyolitic volcanism in central Utah. She has also been working on revisions to a manuscript titled "Temporal, spatial, and chemical evolution of Quaternary high-silica rhyolites in the Mineral Mountains, Utah" which will be published in a U.S. Geological Survey Professional Paper volume on distributed volcanism.

**John Huntley** reports that things have been going well in his group. Ranjeev Epa (Ph.D.), Gabriel Jacobs (Ph.D.), and Delaney Ryan (M.S.) successfully defended in the summer of 2022 (over about nine days!). Delaney is the Curator of Exhibits at the Missouri State Museum in Jefferson City and Gabe is a Lecturer at the University of Pennsylvania. We welcomed new M.S. students Erin Fitzgerald and Emily Edwards (co-advised with Jim Schiffbauer) in Fall 2022 and Zachary Burman in Fall 2023. All three are working on various aspects of the fossil record of parasite-host interactions. Erin's first manuscript,



documenting the collapse of bivalve-trematode interactions in the northern Adriatic over the last 3 ky, is currently in review. Through the generous support of the Alumni Development Board and the Paleontological Society, Erin was able to take a field course in invertebrate zoology at Friday Harbor Labs in the Salish Sea this summer. She is working on a follow-up study to work John conducted there almost 20 years ago. Emily is working on an in-depth study of parasitism in Holocene estuarine deposits from China to better understand long-term changes in the effective population size of trematodes. Zachary is observing much older material, searching for pathologies on Silurian trilobites and (hopefully soon) parasite eggs in

Carboniferous shark coprolites. John is working on a new international collaboration to establish a publicly accessible database containing specimen-level data on biotic interactions from the fossil record that will enable them to test fundamental ecological and evolutionary questions about the history of life. This work is funded by the Volkswagen Foundation via the PaleoSynthesis program at Friedrich-Alexander-Universität in Erlangen, Germany.

**Sarah Jacquet's** research team has ongoing graduate students Eury Speir and Clara Wong currently focused on investigating redox proxies and other geochemical traces in Cambrian Limestones from South Australia, with plans to defend their work in Spring 2024. Recent graduate Cassey Bennett, who completed her Master's degree in Spring 2023, is in the process of preparing her research results for publication in *Palaios* and will be continuing her PhD studies here with Dr. Jim Schiffbauer. Meanwhile, Clare Mate, a dedicated undergraduate research assistant within the lab, has been accepted into the graduate program starting Spring 2024 and is already making strides on collaborative projects, including one



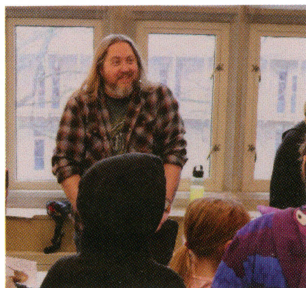
with colleagues at Princeton University. All of these students presented their research at the GSA conference in Pittsburgh, Pennsylvania. On the outreach front, Sarah and several faculty members, including John Huntley, Jim Schiffbauer, and Tara Selly, along with students and collaborators from The Connector, had a successful inaugural "Mizzou Rocks" 3-day Summer Camp. This well-received initiative is set to continue in the future. Lastly, Sarah took a well-deserved maternity leave this fall semester to spend time with her baby, Reya, marking a historic moment as the first person in the department's history to take maternity leave.

**Mian Liu** taught a themes class on nature disasters in the spring and is teaching plate tectonics this fall. He has introduced Python programming in the plate tectonics class in recent years because it is the primary programming language used in data analysis and machine learning, which have become increasingly important for many disciplines including earth sciences. Mian continues to work on mountain building and active tectonics-earthquakes. This year he has been working with Yuxuan Chen, a recent Ph.D., on two papers spring from Yuxuan's Ph.D. dissertation on earthquakes in the central and eastern US and earthquake-strain rate relations in different tectonic settings. He also ventured into something totally new to him – salt tectonics. Fortunately, Yiren Guo, a Ph.D. student working with Mian, is more than capable of taking this challenge, and we were able to benefit from the expertise of our alums – Dick Bishop helped and hooked Yiren up with some experts in the field. The departmental affairs have kept Mian busy – we have hired three faculty members and a visiting associate professor this year. There were a lot of emotional roller-coaster rides in the process. He survived thanks to the great help from our faculty, staff, and students.

**Ken MacLeod** spent October to April of last year living in the UK as a Fulbright Distinguished Chair at the University of Birmingham. Day to day Ken worked with colleagues in Birmingham on a variety of climatic, oceanographic, and paleontological changes across a number of key intervals including the greenhouse/icehouse transition at the end of the Eocene, the warming pulse and deep-sea extinction at the end of the Paleocene, the mass extinction at the end of the Cretaceous, and the formation of the southern ocean during the last phases of Gondwana fragmentation. In addition, Ken traveled around the UK and western Europe visiting other universities and seeing textbook sites important in the history of geology (e.g., Siccar Point, Hadrian's Wall, the Hoojrup Cretaceous/Paleogene boundary section) as well more general interest sites (e.g., Stonehenge, the landslides of the Quiraing, and the Sagrada Familia). While Ken was in Europe, master student Rachael Savoie handled having an advisor by Zoom with great skill and even better attitude. She completed sample preparation in Columbia and then spent a week making oxygen isotopic measurements of fish microfossils at the University New Mexico's stable isotope lab. In April she successfully defended her masters. She used those isotopic results to make inferences about the moisture balance and habitat preferences of fish and early tetrapods on a Devonian flood plain preserved in Pennsylvania as well as the extent of marine waters, if any, present during deposition of the Joggins Formation at the UNESCO World Heritage site in Nova Scotia.



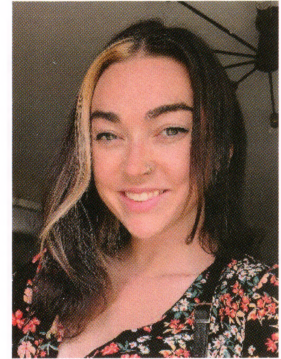
**Eric Sandvol** reports that in February two of the largest instrumentally recorded earthquakes shook southwestern Turkiye. In a joint project with Georgia Tech, they deployed about 200 nodal stations across southwestern Turkiye. This data will help them to better understand the nature of the plate boundaries and future earthquake hazard in this region. In addition, the seismology research group has continued a couple of existing field projects in southeast Asia and the Caucasus. They have also finalized a new 3D Vs and Vp model using full waveform tomography across nearly all of Asia. This new model is yielding important new insights into the interaction between the Indian and Eurasian plates along the Himalaya. Oguzhan Yalvac successfully defended his Master's Thesis and has returned to Turkey and is working to establish a seismology group in Turkiye's equivalent of a Department of Natural Resources (MTA). Astha Singh is continuing her work on seismic anisotropy measurements in the Greater Caucasus and has begun work on migrating receiver functions in eastern Tibet using a new 3D Vp and Vs velocity model. Dustin Ray has made some progress on his efforts to substantially improve our abilities to image shallow structure (upper 50 meters) P-wave refraction tomography. Duyi Li is continuing to focus her work on developing new methods for mapping high frequency wave attenuation in the crust and uppermost mantle. She has been collaborating with colleagues in the University of Missouri Statistics department. Finally, Mohimanul Islam had continued to work on many aspects of our project in Myanmar but with a focus on shear wave splitting across southeast Asia and how it helps us understand mantle flow related to the Hanian plume in the south China Sea. He is also working on a new technique that allows us to isolate site amplification using dense nodal arrays.



**Jim Schiffbauer** reports that it feels like it has been a minute since he has provided one of these updates, so much so that he's not sure exactly where to start with what is new news and what is now, well, old news. From his last discussions with members of the Development Board, the mural for the western staircase is now finally done. It looks fantastic and they can't wait for everyone to see it. At the same time, the department's outreach repertoire grew with the addition of a new summer camp this past year, Mizzou Rocks!, that focused on identifying rocks and minerals, geologic time, and a brief history of life on Earth. This will go hand-in-hand with the mural once it is finally installed. The lab is still making great strides – Tara Selly led a charge to acquire an upgrade grant for the X-ray Microscope to the tune of \$600,000. This will give them a much-needed expansion on their capabilities, both in sample size and scan speed, and they are looking forward to welcoming a new segment of users and collaborative science as a result. Jim's research group will be shrinking in number to only one this spring, with three graduate students set to graduate and a fourth on leave in the Grand Canyon, but they will all be on to bigger and better things. PhD student Casey Bennett and Jim will hold everything down until they can grow again, hopefully in the fall. Jim's

group has also just recently established a Cooperative Research and Development Agreement with the Nevada National Security Site to reevaluate Ediacaran-aged rocks and fossils that haven't been studied for over 70 years – this will be an exciting initiative and he can't wait to get out to see these rocks!

**Tara Selly** received funding from the MU Research Council to lead a field expedition to the Nevada Nuclear Security Site, accompanied by Jim Schiffbauer, graduate student Casey Bennett, and undergraduate student Cassidy Davis. Their primary mission was to assess the USGS' core library, focusing on materials documenting the Ediacaran–Cambrian transition. During their visit, they had the remarkable opportunity to explore various points of interest, including the awe-inspiring Sedan crater, the Apple-2 house, and even caught a glimpse of the closely guarded entrance to Area-51! Additionally, they collected new fossil specimens from the Wood Canyon Formation at our designated field site. They next ventured to the Las Vegas Natural History Museum, where they were treated to an exclusive behind-the-scenes tour of their collections repository. This facility will serve as the future repository for their published type fossils. In another exciting development Tara, in collaboration with her Co-PIs Jim Schiffbauer and Sarah Jacquet, successfully secured \$624,000 from the NSF Instrumentation and Facilities program. This funding will be utilized to carry out a comprehensive upgrade of the micro-CT and to organize workshops designed to educate regional institutions about the capabilities of the MizzouX Lab. This enhancement will significantly expedite the scanning process for larger materials, bolstering their research endeavors.



**Lydia Tackett's** research uses vertebrate microfossils from ocean-deposited sedimentary rocks in order to work out relationships between predators and prey, especially during major environmental changes in the Mesozoic. She is currently working with rocks collected in New Zealand as part of her NSF CAREER grant, finding many fish taxa never before observed from New Zealand.

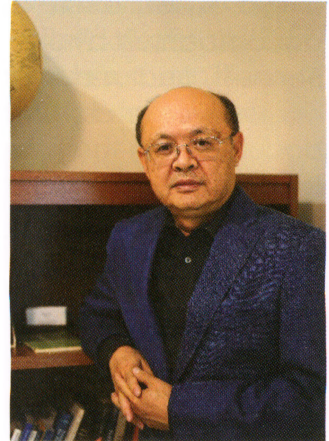
# Mian Liu awarded the Geological Society of America's George P. Woollard Award

## **Department of Geology**

The Geological Society of America (GSA) recently awarded Mian Liu with the 2023 George P. Woollard Award. Liu, the William H. Byler Distinguished Chair and Curators' Distinguished Professor of Geological Sciences, was honored for his outstanding contributions to geology at the annual GSA meeting on Oct. 15 in Pittsburgh.

"I am very humbled by this honor and extremely pleased with the Geological Society of America's recognition of the work my students and I have been doing at the University of Missouri for the past 30 years," said Liu.

Liu's research focuses on the geophysics and geodynamics of the solid Earth. He and his students combine numerical modeling with geophysical and geological data analyses to study mantle flow, lithospheric deformation, mountain building and basin formation, faulting and earthquakes.



The GSA is a nonprofit global scientific society dedicated to the advancement of the geosciences with members from academia, government and industry in more than 100 countries.

## Field Camp Report

It is my pleasure to report, for the first time as director, a great summer at the University of Missouri Geology Field Camp. The 2023 session of field camp was simultaneously familiar and new. Once again and in its 112<sup>th</sup> year of operation, the Geology Field Camp descended on Lander, WY, and the Branson Field Laboratory for 6 weeks of intensive training in geological field methods. At the same time, we were looking towards the future and the coming departure of camp director Dr. Miriam Barquero-Molina, as well as several educational and support staff, whose contributions to the academic mission of the field camp were both substantial and lasting.

This year's class received sixteen students, including eight students from the University of Missouri joined by peers from Boise State University, Dickinson College, Sam Houston State University, SUNY Plattsburg, and the University of Tennessee at Chattanooga. Our students were supported by a rotating cast of ten faculty and four teaching assistants, representing seven academic institutions and private industry. That diversity of experience and perspective provided a solid foundation on which to build an engaging, enriching, and thought-provoking learning experience.

I am happy to report that seven students qualified for scholarships totaling \$6,100. Those scholarships were made possible by the generous contributions of our alumni to the camp's scholarship funds. Those funds provide valuable assistance to our students, enabling them to participate in one of the most high-impact educational experiences of their undergraduate career. Thank you to our many alumni who contribute to the mission and success of Camp Branson.

As mentioned above, Camp Branson said farewell to several instructors who have devoted much to the geology field camp: Miriam Barquero-Molina, Jon Mies, Damon Bassett, and Angie Van Boening. Additionally,

## Field Camp Scholarship Recipients

### **Donald S. Garvin Scholars**

Andrew Crouch, University of Missouri  
Bridget O'Day, University of Missouri  
Alex Strader, University of Missouri  
Kate Taylor, University of Missouri

### **Clayton H. Johnson Memorial Scholars**

Laney Drabczyk, University of Missouri  
Parker LeClair, SUNY Plattsburg

### **George W. Viele Memorial Scholar**

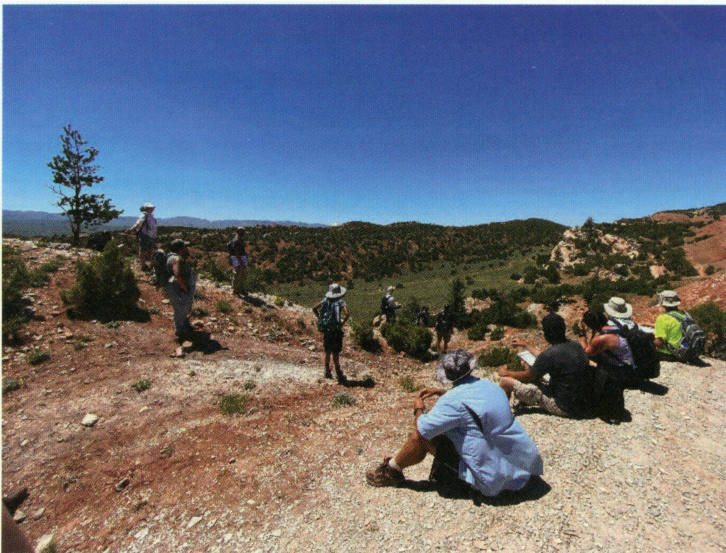
Liz Cahalan

2023 marked the final summer for camp caretakers Henry "Hotrod" and Lynne Smith. In the field, the classroom, and at camp these individuals were committed to the success of the camp and its students. As both a former student and the new director, I would like to express my personal appreciation for their many years of service to the camp.

Looking forward, I am committed to maintaining our camp's well-earned reputation for excellence in geoscience education while also introducing new skills, technologies, and perspectives into the curriculum to reflect the evolving needs of geoscientists.

Nathan Hopkins  
Field Camp Director

### Alumni as Field Camp Teachers



Since 2017 Alumni **Drew Thomas** (Mizzou - MS, Geology, 2012, FC 2009; VP- Geoscience and Business Development at Nexus Energy Partners, LL in Tulsa, Oklahoma) and **Mark Sutcliffe** (Mizzou - MS, Geology: Structural Geology/Metamorphic Petrology, 2013; FC 2007; VP Geology at Staghorn Petroleum II, LLC in Tulsa, Oklahoma) have taught Subsurface Analysis at field camp. Mark and Drew bring real world experience and applications to

our students while sharing the Branson Camp experience with another generation of students.



Student collecting attitudes in the Nugget Sandstone of Dallas Dome.



Field camp faculty and students overseeing geophysical data collection in Red Canyon. From left: Nate Hopkins (Director), Logan Scamfer (Boise State University), **Liz Cahalan** (MU), and **Eric Sandvol** (Faculty).



Mapping on a rainy day!

Matthew Mollica (UT - Chattanooga), **Sam Pritchett** (MU) and Teaching Assistant Emily Edwards collecting flow velocity measurements for streamgaging Red Canyon Creek.



Mikaila Bolin (Sam Houston State University) and **Andrew Crouch** (MU) collecting geophysical data in Red Canyon.



Outgoing director **Dr. Miriam Barquero-Molina** (second from right) leading the students in their first mapping exercise.

S H O W M E

# GEOLOGICAL SCIENCES

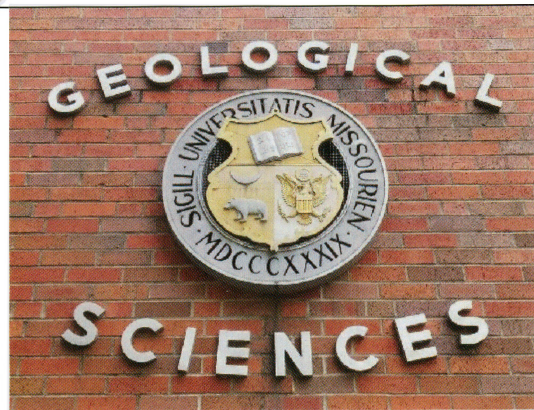
## Geology Alumni Endowment Fundraising Campaign

DEAR ALUMNI & FRIENDS OF THE  
DEPARTMENT OF GEOLOGICAL  
SCIENCES,

Faculty and Students form the foundation of an academic department. The **Geology Alumni Endowment Fund** was specifically created in 2018 to support and strengthen the faculty part of these two pillars, to enable the Department of Geological Sciences to attract & retain the finest faculty, and especially to ensure the success of professors newly recruited to the Department. Both the Department and the Geology Development Board see the **Geology Alumni Endowment Fund** offering an effective way to ensure long-term success for Mizzou's Department of Geological Sciences, to ensure it has the capability to provide cutting edge education for students, and for its faculty to perform first class research in many areas of the earth science discipline.

When the fund reaches its key goal of \$1 million, it will be renamed the **Geology Alumni Endowed Professorship**. At this level it will be a key tool for recruiting and retaining newly hired professors as they begin their careers at Mizzou.

Since the endowment's inception, the balance has grown to \$629,878 thanks to the generous donations from Alumni and friends plus investment growth through university management. This leaves \$370,122 needed to reach our \$1 million goal.



To kickstart this campaign, the Geology Development Board has pledged an initial donation of **\$75,000**. We challenge you, our Alumni and Friends, to help us reach the \$1 million goal by raising the remaining \$295,122.

We ask that you consider joining us in support of the department by donating to the **Geology Alumni Endowment Fund** today. Any amount you may be able to contribute will move it closer to the \$1 million threshold, where it will be a powerful tool for the Department, and indeed the University.

Most sincerely,  
The Department of Geological Sciences &  
Geology Development Board

## A Summary of Endowments

### Investments in the Future

The Department of Geological Sciences is grateful for the financial support of alumni and friends who promote the recognition, welfare, and progress of the Department of Geological Sciences and the University of Missouri. Thank you to our alumni and friends for establishing and supporting the following sixty-one funds supporting the Department of Geological Sciences

**Unrestricted Endowments:**

Lily Marie Carter Endowed Geology Funds - For the unrestricted use of the Department of Geology and the College of A&S.

**Walter D. Keller Opportunities for Excellence Fund** - To enhance the ability of the Department of Geological Sciences to stimulate the greatest possible scholarly growth of students and faculty. The fund shall be used as a recurring means of support of the Department of Geological Sciences to promote professional growth by stimulating opportunities for teaching and research that will elevate individual units and people to higher levels of achievement.

**John & Betty Marshall Opportunities for Excellence Fund** - The fund shall be used as a recurring means of support for the Department of Geological Sciences. The fund shall be used to promote professional growth by stimulating opportunities for teaching, research, and service that will elevate individual units and people to higher levels of achievement, with first priority being given to support for undergraduate students.

**Gene & Thelma Schmidt Geological Sciences Endowment Fund** - To provide unrestricted support to the Department of Geological Sciences.

**Norman E. Smith Opportunities for Excellence Fund** - The fund shall provide a recurring means of supporting the Department of Geological Sciences in the College of Arts and Science. It may be used to promote professional growth among faculty and students by stimulating opportunities in teaching, research, and service that will elevate individual units and people to higher levels of achievement. The fund shall be a catalyst that transforms a good program into a great one.

Walter & Katherine Staley Fund - To be used for the unrestricted support of the Department of Geological Sciences.

**John M. Ware Memorial Geology Endowment Fund** - Shall be used at the discretion of the Chair of the Department of Geology in the College of Arts and Science.

Williamson Family Geology Endowment - Shall be used at the discretion of the Chair of the Department of Geology in the College of Arts and Science.

### **Other Endowed Funds for the Department/Faculty:**

**Geology Alumni Endowment** - As this endowed fund builds, it will provide unrestricted general program support for the Department of Geological Sciences in the College of Arts and Science. When the fund corpus reaches \$1,000,000, the endowment will be renamed the Geology Alumni Endowed Professorship and may be used for research support and equipment, professional development, teaching materials, travel, staff support, etc. The goal of this Professorship shall be to support faculty recruiting by attracting and retaining the finest faculty members and to support and to ensure the success of newly-hired professors.

**Geology Endowment** - To provide for salary supplements for three geology faculty awarded named-professorships. Approved three named positions to date: E.B. Branson Professorship, Raymond E. Peck Professorship in Field Geology, and Raymond Ethington Professorship.

**A. G. Unklesbay Travel Award** - Shall be used to enhance the teaching career of a Geological Sciences professor by providing an opportunity, early in his/her teaching career, to travel to sites where geological processes or phenomena are exceptionally well exhibited. First priority is to an Assistant Professor who has successfully passed his/her third year review. If no Assistant Professor qualifies, the award may be made to an individual with a rank above Assistant Professor or to a Ph.D. candidate who has successfully passed his/her comprehensive examinations and intends to pursue a teaching career at a college or university.

**Geology Faculty Enhancement** - To encourage and reward excellence in teaching and/or research in the Department of Geological Sciences in the College of Arts and Science. The award shall be given annually, in whole or in part, to either the highest or second highest ranked faculty member (or to both, but not necessarily equally) in accordance with the performance rankings established by the Department of Geological Science Advisory Committee.

**Geology Faculty Retention** - One or more annual awards shall be given to faculty members in the Department of Geological Sciences. Awards will be used as a tool to recognize and retain high quality faculty in the Department.

**Swartzlow Endowment Fund** - Library Needs - To be used at the discretion of the Chair of the Department of Geological Sciences in the College of Arts and Science. Preference for use of this fund shall be given to library needs of the Department. Purchases shall include, but not be limited to, journals, periodicals, and reference books.

### **Gift Funds for the Department**

**Geology Sciences Development Gifts** – Unrestricted use by the Geology Department. Established in 1980, the Geological Sciences Development Gifts Fund provides unrestricted support for the department and our geological sciences students. Your gift will help ensure our department endures as a place for scholars to grow and thrive.

## **Camp Branson Field Camp Scholarships:**

**William Burrows Allen Geology Field Camp Scholarship** - One or more annual scholarship awards shall be made to students attending the University of Missouri Geology Field Course at Camp Branson, Wyoming. Recipients must have a declared major in geological sciences and have completed a minimum of eight (8) semester credit hours of geological sciences.

**Donald S. Garvin Geology Field Camp Scholarship** - To provide one or more scholarship awards to students attending the University of Missouri Geology Field Course at Camp Branson, Wyoming. First preference shall be given to non-resident students to help defray the cost of non-resident tuition; second preference shall be given to Missouri residents.

**Clayton H. & Louise K. Johnson Memorial Scholarship Fund** - Shall be used to aid deserving students attending the University of Missouri-Columbia Department of Geology's summer field course at Camp Branson.

**George W. Viele Memorial Geology Field Camp Scholarship Fund** - One or more annual awards shall be made to students attending the University of Missouri Geology Field Course at Camp Branson, Wyoming. Selected recipients must have a declared major in geological sciences and have completed a minimum of eight (8) semester credit hours of geological sciences.

## **Camp Branson Field Camp Endowed Funds**

**Camp Branson Endowment** - Funds shall be used to support student instruction at the University of Missouri's Geology Field Camp at Camp Branson, Wyoming. The use of the funds may include, but is not limited to, stipends, travel expenses, faculty support, scholarship awards, supplies and equipment, instructional materials, improvement of facilities, etc.

**Mitchell Family Camp Branson** - To provide support for the benefit of instruction at the MU geology field camp at Camp Branson, Wyoming. Should Camp Branson cease to exist, this fund shall be used to provide support to the Department of Geological Sciences for priority needs of the Department as determined by the Chair.

**Robert J. Waldram Camp Branson Endowment** - Funds shall be used to support student instruction at MU's geology field camp at Camp Branson, Wyoming. The use of the funds may include, but is not limited to, stipend, travel expenses, faculty support, scholarship awards, supplies, instructional materials, etc.

## **Gift Funds for Camp Branson Field Camp**

**Camp Branson Improvement Fund** - Unrestricted gifts in support of anticipated construction and renovation and field equipment purchases.

## **Graduate Scholarships:**

**John F. & Mary Anne Burst Graduate Fellowship Fund** - One or more annual awards shall be made to graduate students in the Department of Geological Sciences for the study of Industrial Minerals. Selected recipients must have a cumulative grade point average of 3.2. First preference shall be given to students who are graduates of a high school in the United States.

**Hal & Ruth Johnson Fellowship Fund** - To provide one or more annual fellowship awards to graduate students in the Department of Geological Sciences. Selected recipients must have a minimum grade point average of 3.0 on a 4.0 scale for all graduate courses, and 3.2 on a 4.0 scale for courses in the geological sciences.

**Leonard D. Harris Scholarship** - A yearly award(s) shall be made to a graduate student(s) undertaking master's thesis work, or doctoral dissertation work, in geology at the University of Missouri-Columbia. The work must be field-based and must involve U. S. Paleozoic-age sedimentary rocks that crop out east of the Rocky Mountains.

**Wallace B. Howe Fellowship Fund** - An annual award shall be made to a graduate student in the Department of Geological Sciences who is majoring in stratigraphy and/or paleontology. If the amount available for the award exceeds the then prevailing stipend for a TA or RA, the Department may consider the excess for a separate award or reinvest the excess until the corpus generates additional awards of equal or greater value. The selected recipients must have successfully completed at least one year of their graduate work and maintained a minimum grade point average of 3.0 on a 4.0 scale.

**Norman W. and Shirley T. Jeffries Graduate Fellowship Fund in Geology** - This fund supports both the Jeffries Graduate Fellowship Awards and the Raymond E. Peck Graduate Fellowship Awards. One or more annual awards shall be made to graduate students in the Department of Geological Sciences.

**Walter D. Keller Scholarship Fund** - One or more annual awards shall be made to full-time geology graduate students at the University of Missouri-Columbia.

**Maurice G. Mehl Memorial Scholarship in Field Geology** - Funds shall be used for providing stipends for field expenses for graduate students in Geology, in the areas of stratigraphy and paleontology, who are of good moral character and in need of financial assistance (as determined by the Department of Geological Sciences).

**Raymond E. Peck Graduate Fellowship** - One or more annual fellowship awards shall be made to graduate students in the Department of Geological Sciences.

**Carl B. Rexroad Geological Sciences Endowment** - Awards shall be made in the Department of Geological Sciences, with the preference for awards as follows: A) First preference shall be given for paleontologic study in Missouri and secondly outside of the State (first subpreference graduate students, second undergraduates, and third faculty). B) Third preference shall be given to field study in "soft rock" geology in Missouri and fourthly outside of the State (first subpreference graduate students, second undergraduates, and third faculty). C) Fifth preference shall be to promote professional growth among students, faculty, and staff by stimulating opportunities for teaching, research, and service for the development of the Department.

**James H. Stiff Memorial Fellowship** - To provide one or more annual fellowship awards to graduate students in the Department of Geological Sciences. First preference shall be given to students conducting thesis research in paleontology. Second preference shall be given to students conducting thesis research in stratigraphy. Third preference shall be given to students conducting thesis research on sedimentary rocks. Selected recipients must have a minimum grade point average of 3.0 on a 4.0 scale for all graduate courses, and 3.2 on a 4.0 scale for courses in the geological sciences.

**W.A. Tarr Scholarship** - To provide a yearly award for the most needy and worthy student in the study of Mineralogy and Economic Geology.

**Dr. M. Ray Thomasson Graduate Fellowship Fund** - To provide one or more annual awards to graduate students in the Department of Geological Sciences. Applicants should have an interest in (1) the integration of geologic and geophysical (seismic, gravity, and magnetics) data, (2) passive or active seismic sources, and (3) at least some interest in how various disciplines can be applied to Petroleum Exploration, Development and/or Research.

**Jack & Mildred Schindler Geological Sciences Endowment Fund** - "Ninety percent of the annual distribution shall be used to fund the A. G. Unklesbay Graduate Scholarship in the Department of Geological Sciences. Selected recipients must have a minimum grade point average of 3.2 on a 4.0 scale. Ten percent of the annual distribution shall be used to defray expenses of students participating in the Department of Geological Sciences field trips."

#### **Undergraduate Scholarships:**

**Mr. & Mrs. Richard G. Boyd Endowment** - Funds in the distribution account shall be used for scholarship/fellowship awards to students enrolled at the University of Missouri-Columbia. Fifty percent (50%) shall be used for Geology students in the College of Arts and Science and fifty percent (50%) for students enrolled in the Sinclair School of Nursing.

**James G. Mitchell Memorial Fund in Geology** - Shall be used to support the James G. Mitchell Memorial Scholarship in Geology which is to be awarded every other year beginning in 1978. Students considered for the James G. Mitchell Memorial Scholarship in Geology shall be in their Junior year with a major in Geology and shall be based upon academic excellence without regard to financial need.

**"Mrs. Pat" (Mabel E. Patterson, Mrs. John F.) Scholarship** - One or more annual awards shall be made to full-time students enrolled in the College of Arts and Science Department of Geological Sciences. Recipients must exhibit academic progress which would indicate potential success in the field of Geology and have a demonstrated financial need.

**Raymond E. Peck Undergraduate Scholarship** - Up to three (3) awards shall be granted annually, each award to be at least \$1,000. If income permits, additional awards and/or larger awards may be granted. Criteria for selection shall be undergraduate and/or graduate students whose major is geology. Financial need shall not be a criterion.

**Edmond A. & Mary L. Raymond Scholarship** - One or more annual scholarship awards to students majoring in the Geological Sciences. The selected students shall exhibit the strong academic standards reflective of the spirit in which this fund is established. Recipients are required to have a minimum GPA of 3.0 on a 4.0 scale.

**Pearl Todd Sando Perpetual Undergraduate Scholarship in Geological Sciences** - Recipients of this scholarship must be declared majors in geological sciences, or must be an entering freshman who states an intent to major in geological sciences and declares a major at the earliest opportunity. First preference, student, from Dunklin County, MO; second preference, student from Mississippi delta country in S.E. Missouri; third preference students from Missouri; fourth preference, USA at large. Recipients must maintain a grade point average of 3.0 (out of 4.0) and maintain continuous progress toward a degree in geology, acceptable to the chairman of the Department of Geological Sciences or lose the scholarship. Amounts to be received by the recipients to be determined by the Chairman of the Department of Geological Sciences. The Chairman of the Department of Geological Sciences will choose the recipients of these scholarships which will continue until graduation provided recipients continue with geology as a major and maintain grade requirements acceptable to the Chairman of the Department of Geological Sciences, and shall be in accord with accepted rules and regulations within the Columbia campus office of Student Financial Aid.

**Gene W. Schmidt Undergraduate Scholarship** - To provide one or more annual awards to students in the Department of Geological Sciences with preference given to Hydrogeologic studies. The award is available to undergraduate students with first preference given to sophomore level students. There is no minimum grade point average restriction.

**Fred Strothmann Perpetual Geology Scholarship Fund** - Scholarship awards in equal amounts to both graduate and undergraduate students to a declared major in geology, exclusive of hydrology and geophysics, and must have completed a minimum of eight (8) credit hours of geological courses. Graduate students must have a grade point average of 3.2 to receive this award. Undergraduate recipient must have as a minimum a 3.0 grade point average in geological courses, and a 2.75 overall grade point average, based upon a 4.0 grade point average system. Undergraduate recipient must maintain an overall 3.0 GPA in geological courses and a 2.75 overall GPA in the University of Missouri or lose the scholarship for the following semester, and thereafter.

### **Both Graduate/Undergraduate Scholarships:**

**Richard P. Frey Memorial Paleontology Fund** - Income shall be used "to add to, improve, update and/or catalog its invertebrate fossil collection, and more specifically, to increase its collection's value as a teaching and research collection."

**Ernest J. Palmer Memorial Scholarship** - Shall be used for establishing scholarships in the fields of paleontology and systematic botany for undergraduate or graduate students in said fields who are in need of financial assistance to complete their studies. It is the desire of the donors that the scholarships be alternated between the two departments, but it is not necessary that they be alternated annually. It is the desire of the donors that

during the years an equal number of scholarships shall be awarded to each department. It is also the desire of the donors that recipients shall be encouraged to spend part of their time in cataloging and taking care of the Palmer collections, but this shall not be a requisite to the award of the scholarship. Note: Geology shall make awards in even years and Biological Sciences shall make awards in odd years.

**Robert W. Quearry Scholarship** - One or more annual awards shall be made to undergraduate or graduate students in Geological Sciences. If the Department of Geological Sciences is no longer a part of the University of Missouri curriculum, then this fund shall be used to provide unrestricted support in the College of Arts and Science.

**Edwin Bayer Branson Memorial Fund** - Research. This fund was established for the charitable and educational purpose of making scholarship grants to such students at the University of Missouri, at Columbia ("Campus"), as are members of the Junior or Senior Class or are enrolled in the Graduate School, and as may be selected by majoring in the field of Geology and having been recommended.

**Geology Student Scholarship Fund (GSSF)** – To provide annual awards to students in the department of geological sciences. These awards are available to both undergraduate and graduate students. The selection should be made by the Chair of the department of geological sciences, or by a committee of persons authorized to act on behalf of the Chair. The Geology Student Scholarship Fund has been maintained by the generous donations made over the years by alumni and friends of the Department of Geological Sciences, including funds gifted by Dr. Glen Himmelberg and William D. Johns. These scholarship funds are available to both undergraduate and graduate students and may be used for one or more awards each year. Gifts to this fund will help to provide professional development or research opportunities to students in order to recruit and grow our undergraduate and graduate programs. The following funds are under the umbrella of the GSSF fund. Donations can be made to the GSSF Fund or the following Funds:

**Davies Memorial Scholarship** – Scholarship award to students in Geological Sciences

**Ethington Geology Student Scholarship**

**Tom Freeman Geology Student Scholarship** – Awarded as the Professor Tom Freeman

**Geology Student Scholarship Award**

**Himmelberg Geology Student Scholarship**

**Johns Geology Student Scholarship**

**Knotts Memorial Scholarship**

**Knox Geology Student Scholarship**

**Robert C. Miles Geology Student Scholarship**

**Raymond Outstanding Achievement**

**Steyaert Geology Student Scholarship** – Awarded as the David J. and Jennie F. Steyaert

**Geology Student Scholarship Award.**

**Tlapek Geology Student Scholarship**

**Viele Geology Student Scholarship** – Awarded as the Dr. George Viele **Geology Student Scholarship Award.**

## In Memoriam

### Ed Williamson --- 1946-2023

Ed Williamson, MS Geology 1974, Geology Development Board member for 38 years, former Board Chairman, Development Board Honorary Life Member, passed away April 16, 2023. Any attempt to chronicle Ed's substantial monetary contributions, and personally, will fall short. His work and influence, both for the Department of Geology and the College of Arts and Science, exceeds description. What follows represents at best a summary of these.

Born in Seattle and raised in Houston, Texas, Ed earned his BS in Geology from the University of Texas in 1969. Following one year and seven months in the US Army, Ed chose to continue his education at the University of Missouri in Geology. Working under Professor David K. Davies, Ed and Dr. Davies formed a life-long friendship. Apparently, Ed also studied quite a bit since he met his future wife Connie while she was working in the Geology library. Following his graduation in 1974, Ed went to work for Amoco Production Company in Houston.

After his transfer to New Orleans in 1984, he began his first work with the Department of Geology here at Mizzou. At that time the Field Camp dining hall had been determined by the local health department in Fremont County, Wyoming to not meet the required standards. An initiative by the Department of Geology and the Development Board to build and equip a completely new dining hall began. Ed enlisted each of us Mizzou alumni at Amoco to help get Amoco to build the new dining hall. As it turned out, Amoco had a policy of not financing permanent structures on government property. Working around that, Ed was able to secure Amoco's commitment to providing much of the equipment and furnishings for the interior of the building. What makes this effort even more generous is the fact Ed did not attend Camp Branson, having attended field camp while an undergraduate at the University of Texas.



From that rather auspicious start, Ed became one of the pillars of the Geology Development Board. He initiated an endowment that brings in visiting speakers, and established, and repeatedly funded the "Faculty Retention Fund". Often when a new endowment or fund needed an initial principle, Ed was there to step up.

In addition to his work with Geology, Ed also served on the College of Arts and Science's Board. Not only did this provide an experienced voice to deliberations across the College, it also raised the level of recognition of the Geology Department and the exceptional work of the Development Board.

On a general basis, Ed's insights and analytical abilities quite often helped the Development Board focus on the solutions to an issue and finding the best of those solutions. He quietly listened to the discussion, choosing to wait and speak once others had their time. I was always impressed at this ability of Ed's, along with his calm, concise delivery.

In closing, I'll use a quote from Kevin Shelton. At the 2011 Camp Branson Reunion, Ed, who had diabetes, came to the camp for the first time. My family and I were hiking to Popo Agie Falls and Ed asked to join. It was a very warm day. Kevin saw he was going with us, pulled me aside, and said, "Larry, watch him and make certain he is okay. We really need him."

Now we must move forward without him. He will be missed. *Larry Knox*

## Alumni News

**Anthony (Tony) Bollasina** has been working with the New York State Department of Environmental Conservation as a professional geologist for the last five years. He leads investigations that focus on PFAS contamination in the environment. He says it's a challenging emerging contaminant that requires extensive drilling and sampling programs to identify and remedy sources. He hopes everyone is doing well in Como and looks forward to a visit soon!

**Cindy Carroll** resides in Jefferson City, Missouri.

**Jim Frank** retired from Chevron in 2015 after 37 years. He joined the geology development board in 2016 and is currently living in Houston (winters) and northern Wisconsin (summers). Jim gives a shout out to Rob Kalish!

**Joseph Hill** writes that he is now the chair of environmental and geosciences at Sam Houston State University. He and wife Kristin recently celebrated their 25<sup>th</sup> anniversary. Their oldest son, Aidan, is a sophomore at the University of Tennessee double majoring in physics and math. Youngest son, Elias, is a junior in high school and is doing well.

**John Hoke** writes that he and wife **Kim** (also an alum) are doing well in Jefferson City. Kim continues as an IT project director with a federal IT services contractor and John was recently promoted to Director of the Water Protection Program, with the Missouri Department of Natural Resources, where he is leading a team of scientists and engineers to protect surface and groundwater quality in Missouri. Their three children (20, 15 and 10) are all doing well, with their oldest studying abroad in Japan this semester.

**David T. King, Jr.** is still working on impact craters in Alabama and Tennessee, but also now in the applied area of carbon sequestration, specifically stratigraphic and sedimentological analysis of suitable subsurface targets for disposal of supercritical liquid carbon dioxide from industrial sources. His work is mainly in Alabama now but may be in other areas in the future. He recently finished a 4<sup>th</sup> edition of Alabama Dinosaurs, which is now available thru Amazon. David writes, "I send my best wishes to

all former faculty with whom I studied and fellow students whom I knew during the era 1976-80 when I was at MU."

**Sarah (Tourre) Korose** resides in Grand Haven, Michigan.

**Diane Krueger** writes that she is now halfway thru her 16<sup>th</sup> year as a geoscientist with Stantec Consulting Services where she conducts Phase 1 environmental site assessments, report writing and document quality reviews, and also do soil groundwater sampling when needed. Currently she is wrapping up a year in the Cleveland, Ohio area, going back and forth between two different demo sites. She enjoys her work! But in her spare time she has a booth at an antique outlet, and loves to hunt for items to sell there.

**David Leach** reports that after serving 10 years at the Lawrence Livermore Lab in California, 30 years at the U.S. Geological Survey in Denver and 10 years as a professor at the Colorado School of Mines, he is retiring at the end of this year. He writes that he will remain active in some research but will begin spending increasing amounts of time as a retired old man in Tucson!

**Stuart Maier** retired in 2019 as senior vice president of the geosciences department with Gulfport Energy Corporation after 21 years. He writes, "It was a great run with activities in Appalachia, Rocky Mountains, Gulf Coast and Mid-Continent in the U.S., and also in Belize, Thailand and Canada outside of the U.S. Currently I spend most of my time working my land. Ironically, I got a college degree to avoid the hard physical labor I experienced working in my youth then retired to do hard physical labor. All my best to my fellow students and faculty I had the pleasure to work with during my time at Mizzou."

**Tim McHargue** reports that his semi-retirement from Stanford continues. He and Joni recently visited their son and his wife in Ontario. Tim writes, "Enjoying the good life in California."

**William Neal** writes, "Being 'long in tooth' (83) there are fewer and fewer fellow alums out there who will care one way or the 'tuther', but this old fossil is following the model of the professors from my student days in continuing professional activities into old age (e.g., Maurice Mehl, A.G. Unklesbay, Walter Keller and Tom Freeman)."

**Steve Phillips** continues to work for the Ryder Scott Company in Houston. The job still mostly involves consulting related to oil and gas resources but now projects related to CCUS, helium and lithium are in the mix. He writes, "It should not be surprising, but I now find myself among the old-timers at RSC. However, I continue to learn new tricks and find working with the early and mid-career folks energizing." He writes that is now starting to work more of a part-time schedule.

**Mike Piechowski** is now working as a principal hydrogeologist for Terraphase Engineering, Inc. in Tacoma, Washington. Mike was formerly with Robinson Noble before the merge.

**Joao Alberto Pratini de Moraes** writes that he still remembers his four years spent at Mizzou in the geology department. Joao is now retired and lives in Belo Horizonte for more than 50 years. Joao is now 80 years old and sends best wishes to all.

**Scott Raymond** writes, "Hi everyone. It's good to have the old newsletter format back. On this end I am still retired, living a bit south of Denver and serving on the Geology Development Board (31 years and counting). Look me up if you plan on being in the vicinity, and stay well all."

**Richard Schmitz** writes, "Hello! I am still alive and (weakly) kicking. My wife and I both are on oxygen at least part of the day due to a bout of pneumonia in 2010. We have two grandchildren, one studying graphic arts a community college and one getting ready to major in aerospace engineering in a school that has not yet been selected."

**Geoffrey Rigsby** is a global sales manager for Sigicom AB, and resides in Stockholm, Sweden.

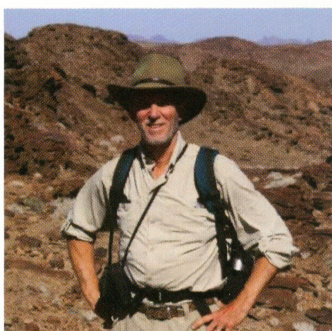
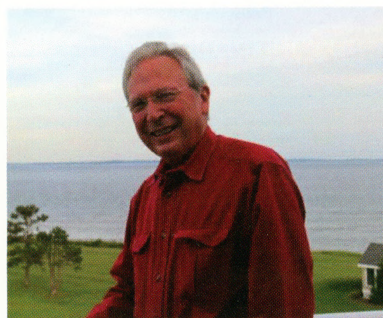
**Jesse Snowden** reports that he is happily retired in Marshall, Texas. He has many fond memories of the great faculty, staff and students in Swallow Hall and the move to the "new" building in 1964.

**Randal Thomas** reports that after leaving Mizzou with a bachelor's degree in geology he competed his doctoral degree at Penn State.

**Bob Waddell** writes that he is approaching 35 years in the same job he took after graduating from Mizzou, although it is company number three due to acquisitions. Bob writes, "My geology and civil engineering bachelor degrees ended up being a great combination for a very rewarding career as a geotechnical engineer specializing in dam design and construction for the last 30 plus years. I have become a widely recognized expert in dam foundation grouting. Retirement is hopefully not too far away, but I do love what I do and not sure I can fully walk away from a career that I love, thanks in no small part to the education provided at Mizzou."

**We welcomed the following Alumni as  
Williamson Family Colloquium Speakers in 2023**

Dick Bishop, Ph.D. (Mizzou MA. '69)  
*Origins and Habitats of Super-Giant  
Oil and Gas Fields,*  
April 14, 2023



Tim McHargue, Ph.D. (Mizzou BS '71, MA 74)  
*Megascour Erosion and Proposed Holocene  
Catastrophic Modification of the Eel  
Submarine Canyon Concurrent with  
Northward Migration of the Mendocino  
Triple Junction, Northern California,*  
April 14, 2023

Dr. Arianna Soldati  
(Mizzou PH.D. 2018)  
*Towards Viscosity Monitoring*  
Sept, 1 2023



John Heberger, Jr.  
(Mizzou BS '74, MA '77)  
*The Most Diverse Geology on Earth?  
Jackson Hole & Northwest Wyoming.*  
Oct 27, 2023

### From our Development Board Chair...

This past year has seen several changes for the Geology Development Board. In the spring of 2023, we lost Honorary Life Board Member, Ed Williamson. Ed was our longest serving member on the board, 38 years. We are forever grateful for Ed and his wife Connie's service and contributions to the Geology Department and the University; Ed will be missed. This fall we say farewell and thank you to Marsha Huckabey. Marsha has been here in the Geology Department to see to the needs of the board members, faculty, students, and staff for 37 years. We wish Marsha all the best in her retirement and give her our grateful thanks for her friendship through the years.

In the last year we have also welcomed four new board members: Justin Tiffany, Randy Cox, Logan Hill, and John Heberger, and student board member Mikaela Pulsipher. I'd like to thank Jim Frank, Vice Chair, and the board members for their hard work and dedication supporting the department. All of our board members are exceptional, but I would like to take this moment to recognize our very own Carey Bridges on her appointment at the end of 2022 as Director and State Geologist, Missouri Geological Survey - Missouri Department of Natural Resources. Congratulations Carey!

Ever since I reconnected with the department 15 years ago, I continue to be impressed by the accomplishments of our faculty and students. I commend our Department Chair, Mian Liu, the faculty, and staff for outstanding work through the recent challenging years of budget compressions and the Covid-pandemic. I also want to thank and recognize previous Board Chair, Larry Knox, for his leadership and insight through those challenges. I look forward to the new opportunities for growth and achievement for the department in the coming years.

As Board members, we work to "promote the recognition, welfare, focus, and progress of the Department of Geological Sciences and the University, and to encourage and explore financial support for the Department." Thanks to you, our alumni, our students and faculty benefit from your generosity every day through scholarships, program support, and field support just to mention a few. In 2018, the Development Board established the Geology Alumni Endowment. This Fall we have launched a new initiative to help the Geology Alumni Endowment reach its primary goal of \$1 million. I thank the board for their contributions of \$75,000 to kick start this campaign, and I invite you to join us in this effort to raise the additional \$295,122 needed to reach our goal. We appreciate any contributions you can give. Details and a direct donation link can be found at <https://geology.missouri.edu/giving>.

If your 2024 travels bring you near Columbia, stop by to see the latest at your Department of Geological Sciences.

Best regards,



Martha George

Chair

## The Geology Development Board

The purposes of the Board are to promote the recognition, welfare, focus, and progress of the Department of Geological Sciences and the University, and to encourage and explore financial support for the Department.

Martha George, Chair  
Schlumberger/WesternGeco (retired)  
Nashville, IL  
Email: [martha.george@outlook.com](mailto:martha.george@outlook.com)

Jim Frank, Vice Chair  
Chevron (retired)  
Houston, TX  
Email: [jimfrankjrfr@gmail.com](mailto:jimfrankjrfr@gmail.com)

Carey Bridges  
Missouri Department of Natural Resources  
Jefferson City, MO

Tim McHargue  
Chevron (retired)  
San Ramon, CA

Mary S. Clark  
Missouri Department of Natural Resources (retired)  
Jefferson City, MO

Gary Mitchell  
Petroleum Geologist (retired)  
Highlands Ranch, CO

Dr. Randy Cox  
University of Memphis, Dept. of Earth Sciences  
Memphis, TX

Mikaela Pulsipher  
Student Representative  
Columbia, MO

John Heberger  
Chevron (retired)  
Jackson, WY

Michael Quearry  
Chevron (retired)  
Houston, TX

Logan Hill  
Chief Geologist at Freeport-McMoran  
Morenci, AZ

Scott Raymond  
Marathon Oil Co. (retired)  
Littleton, CO

Aaron Johnson  
American Institute for Professional Geologist  
Thornton, CO

Dita Sahdarani  
Student Representative  
Columbia, MO

Harold E. Johnston III  
Columbia, MO

Buddy Schweig  
USGS (retired)  
Denver, CO

Larry Knox  
BHP Billiton (retired)  
Houston, TX

Mark Sutcliffe  
Council Oak Resources  
Tulsa, OK

Marty Krueger  
ConocoPhillips  
Stavanger, Norway

Drew Thomas  
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